EEL4744: Microprocessor Applications
Textbook (ISBN: 0195371615 or 9780195371611)

- **Textbook**: F. Cady, *Microcontrollers and Microcomputers Principles of Software and Hardware Engineering*, Second Edition, Oxford University Press, New York, NY, 2009, ISBN13: 9780195371611, ISBN10: 0195371615. This is a **paperback** book.
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As of 12Dec2023

EEL4744: Microprocessor Applications
Digilent Analog Discovery 2 or 3 (DAD)

- The **DAD** (**D**igilent **A**nalog **D**iscovery) is required for many UF EE & CpE courses
- If you don't have one, you can now checkout a DAD-3 from ECE (and return it when you are no longer taking ECE courses).
  > The DAD-3 uses USB-C and is slightly more capable that the DAD-2, but in no way that will make a diffenence in our course.
  > Check one out from
  – TBD.

As of 22Dec2023

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Digilent Analog Discovery 2 or 3 (DAD)

- **DAD** is now required in **<u>many</u> EE & CpE courses**
  > The DAD has the following functions:
  - 2-Channel O'scope (1MΩ, ±25V diff, 5MHz bandwidth, 100Msample/sec)
  - 2-Channel Waveform Generator (22Ω, ±5V, 14 bit, and last 2 above specs)
  - 16-Channel Logic Analyzer and Digital Pattern Generator
  - ±5VDC Power Supplies (+5V at 50mA, -5V at 50mA)
  - Spectrum Analyzer (3.3V CMOS, 100Msample/sec)
  - Network Analyzer (Bode, Nyquist, Nichols; 1Hz-10MHz)
  - Voltmeter (AC, DC, ±25V), Digital I/O
  - Digital Bus Analyzers (SPI, I2C, UART, Parallel)
- We will use it in most of our labs and **<u>DURING</u>** Practicals 1 and 2

EEL4744: Microprocessor Applications

Manuals and Software

- **<u>Microchip/Atmel manuals</u>** (from our website and/or Microchip website)
  >The below **FREE** manuals will be used regularly in the course. A few others will also be used. Get them **ASAP.**
  - <u>https://mil.ufl.edu/4744/docs/XMEGA/doc8331_%20XMEGA_AU_Manual.pdf</u>
  - <u>https://mil.ufl.edu/4744/docs/XMEGA/doc8385_ATxmega128A1U_Manual.pdf</u>
  - <u>https://mil.ufl.edu/4744/docs/XMEGA/doc0856_AVR_Instruction_Set.pdf</u>
- **<u>Software</u>**
  >Microchip/Atmel Studio 7.0 (also **FREE**)
  - An integrated development environment (IDE) for developing and debugging Atmel ARM® Cortex™-M processor-based and Atmel AVR® microcontroller applications (including our XMEGA)
  - See the Microchip Studio 7.0 Installation Tutorial at
    - <u>https://mil.ufl.edu/4744/docs/Install_Atmel_Studio_7.0.pdf</u>

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Announcements (Action Items)

- Hardware purchases
  - >Parts paid for with your lab fee ($135.20)
    - –The UF-specified boards designed by *Out of the Box Robotics,* http://ootbrobotics.com/
  - >You **might** need: USB Port Expander, speaker(s)
    - –3 USB Ports: 1 for µPAD, 1 for DAD, 1 for 3701 (or 4712) PLD
    - –No earbuds or headphones allowed in Honorlock (so you might need a cheap speaker)
- Textbook purchase (***not required***)
  - > Can/should be shared (if social-distancing allows)
  - > Buy it **used**